

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 04 OCT 2005

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Applicant's or agent's file reference P26984PC00	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/IB2004/051060	International filing date (day/month/year) 30.06.2004	Priority date (day/month/year) 02.07.2003
International Patent Classification (IPC) or national classification and IPC F41A13/08		
Applicant DENEL (PTY) LTD ET AL.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☐ sent to the applicant and to the International Bureau) a total of sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 14.04.2005	Date of completion of this report 06.10.2005
Name and mailing address of the International preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 </div> </div>	Authorized Officer Giesen, M Telephone No. +31 70 340-



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/IB2004/051060

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-11 as originally filed

Claims, Numbers

1-19 as originally filed

Drawings, Sheets

1/6-6/6 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
 - ☒ claims Nos. 19
because:
 - ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
 - ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
 - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
 - ☒ no international search report has been established for the said claims Nos. 19
 - ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
 - the written form ☐ has not been furnished
 - ☐ does not comply with the standard
 - the computer readable form ☐ has not been furnished
 - ☐ does not comply with the standard
 - ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
 - ☐ See separate sheet for further details

**INTERNATIONAL PRELIMINARY REPORT
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International application No.
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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-18
	No: Claims	
Inventive step (IS)	Yes: Claims	1-18
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item III.

Claim 19 contains references to the description and the drawings. According to Rule 6.2(a) PCT, claims should not contain such references except where absolutely necessary, which is not the case here.

Re Item V.

- 1 The following documents are referred to in this communication:

D1 : US 5 404 789 A (HAAS) 11 April 1995 (1995-04-11)

D2 : US 3 377 918 A (AUSTIN ET AL.) 16 April 1968 (1968-04-16)

D3 : US 2 807 986 A (HOWARD ET AL.) 1 October 1957 (1957-10-01)

- 2 Document D1, which is considered to represent the most relevant state of the art, discloses:

a fume extractor for extracting fumes from a bore of a barrel of a gun comprising a main reservoir surrounding said barrel, a first set of ports communicating with the barrel and a further set of ports communicating with the barrel, the arrangement being such that the main reservoir is pressurised when the gun is fired and further such that the fumes in the barrel are extracted by the release of pressure in the main reservoir via the further set of ports.

From this, the subject-matter of independent claim 1 differs in that:
there are provided in addition:

- an inlet reservoir also surrounding the barrel and communicating with the barrel via said first set of ports and with the main reservoir via a second set of ports and
 - an auxiliary reservoir also surrounding the barrel of the gun and communicating with the main reservoir via a third set of ports and with the bore of the barrel of the gun via the further (fourth) set of ports,
- the arrangement being such that the main reservoir is pressurised via both the inlet and auxiliary reservoirs when the gun is fired and further such that the fumes in the barrel are extracted by the release of pressure in the main and auxiliary reservoirs via the further (fourth) set of ports.

2.1 The subject-matter of claim 1 is therefore novel (Article 33(2) PCT)

3. The problem to be solved by the present invention may be regarded as:
decrease the speed of discharge, increase the cooling capacity, reduce the wear on the valves and facilitate maintenance (see page 2, lines 5 - 21).
- 3.1 The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:
None of the documents cited in the search report disclose fume extractors having an inlet reservoir and an auxiliary reservoir in addition to a main reservoir.
4. The dependent claims 2 - 16 provide additional features to the subject matter of independent claim 1.
5. Claims 17 and 18 describe a barrel and a gun including the fume extractor according to independent claim 1. Since the subject matter of independent claim 1 is novel and involves an inventive step, a barrel and a gun including this subject matter are also novel and involve an inventive step.